

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

REC'D 26 APR 2006

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To:

see form PCT/ISA/220

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/IB2004/051019

International filing date (day/month/year)
26.06.2004

Priority date (day/month/year)
30.06.2003

International Patent Classification (IPC) or both national classification and IPC
INV. H01J61/32 H01J61/34 H01J61/56 H01J61/28 H01J61/35

Applicant
KONINKLIJKE PHILIPS ELECTRONICS, N.V.

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

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**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/B2004/051019

Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material:
☐ a sequence listing
☐ table(s) related to the sequence listing
 - b. format of material:
☐ in written format
☐ in computer readable form
 - c. time of filing/furnishing:
☐ contained in the international application as filed.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/B2004/051019

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-14
	No: Claims	
Inventive step (IS)	Yes: Claims	
	No: Claims	1-14
Industrial applicability (IA)	Yes: Claims	1-14
	No: Claims	

2. Citations and explanations

see separate sheet

Re Item V

Reference is made to the following documents:

- D1: US-B1-6 169 362 (KLINEDINST KEITH A ET AL) 2 January 2001 (2001-01-02)
D2: WO 02/099146 A (THE PENN STATE RESEARCH FOUNDATION; GERMAN,
RANDALL, M; IACocca, RONAL) 12 December 2002 (2002-12-12)

INVENTIVE STEP

2 Independent claim 4

- 2.1 The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 4 does not involve an inventive step in the sense of Article 33(3) PCT.

The document D1 is regarded as being the closest prior art to the subject-matter of claim 4, and discloses (the references in parentheses applying to this document) improvements in fluorescent lamps (column 1, line 7), said lamp comprising: discharge vessel with a luminescent layer, housing base, ballast circuit (column 5, lines 10-29; fig. 1) and means to reduce the amount of leachable mercury (column 3, lines 53-56; column 6, lines 14-15).

The subject-matter of claim 4 therefore differs from D1 in that it additionally comprises means to reduce the amount of leachable lead.

The effect of this distinguishing feature is a higher environmental friendliness of the lamp.

The problem to be solved is therefore be regarded as how to modify the lamp to obtain higher environmental friendliness.

- 2.2 Document D2 discloses lead-free solders, which are useful in lighting applications

(page 1, line 4-6). It is generally known and in D2 explicitly explained that lead is a harmful, toxic, heavy metal with negative impact on the environment. Thus, there is a tendency to remove lead from electronics, fuel etc. In D2 the use of such lead-free solder in various lamps (page 23, line 17-20), with the scope of environmental protection, is presented.

- 2.3 When confronted with the mentioned problem, the skilled person would realize that the use of lead-free solder described in D2 would reduce the amount of leachable lead. Therefore, the skilled person would apply the teachings of D2 to the embodiment of D1 and derive a lighting unit, having all features of claim 4, without exercising an inventive step.

Consequently the subject-matter of claim 4 does not involve an inventive step.

3 Independent claims 1 and 11

The same reasoning applies, mutatis mutandis, to the subject-matter of the corresponding independent claims 1 and 11, which therefore are also considered not inventive. The skilled person would experiment to obtain the required threshold of lead and mercury, without exercising an inventive step.

(The exact amount of the lead and mercury in the TCLP test is a matter of experimentation.)

4 Dependent claims

Dependent claims 2, 3, 5-10, 12-14 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of inventive step (see the corresponding passages cited in the search report) for the following reasons:

The additional features defined in claims 2, 5-7 are already known from D2, therefore they cannot contribute to an inventive step.

The additional features defined in claims 3, 12-13 are present in D1 and consequently not contributing to an inventive step either.

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AUTHORITY (SEPARATE SHEET)**

International application No.

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The additional feature present in claims 8-10 is automatically fulfilled, if the lamp is supposed to pass the TCLP test.

The additional feature present in claim 14 is common use in the art.